

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/15336

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl⁷ C07H9/04, 13/04, 13/08, 19/06, 1/00//C07B39/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl⁷ C07H9/04, 13/04, 13/08, 19/06, 1/00, C07B39/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
CAPLUS (STN), REGISTRY (STN), CASREACT (STN)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X	WO 03/020685 A1 (Mitsubishi Gas Chemical Co., Inc.), 13 March, 2003 (13.03.03), Full text & JP 2003-64034 A	1-3
Y	EP 1172369 A1 (AIR PRODUCTS AND CHEMICALS, INC.), 16 January, 2002 (16.01.02), Full text & JP 2002-193989 A & US 6462191 B1	1-3, 12-15, 23
Y	DMOWSKI, W. et al., DIALKYL- α , α -DIFLUOROBENZYLAMINES AND DIALKYL(TRIFLUOROMETHYL)AMINES-NOVEL FLUORINATING REAGENTS, Journal of Fluorine Chemistry, 1983, Vol.23, No.3, pages 219 to 228	1-3, 6-17

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
08 January, 2004 (08.01.04)Date of mailing of the international search report
27 January, 2004 (27.01.04)Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 3101357 A (Syntex Corp.), 20 August, 1963 (20.08.63), Full text (Family: none)	1, 3, 6-13, 15-17
X Y	WO 00/58240 A1 (PHODIA CHIMIE), 05 October, 2000 (05.10.00), Full text & EP 1165465 A1 & JP 2003-525204 A	4, 5 6-23
X Y	WO 01/02320 A1 (PHODIA CHIMIE), 11 January, 2001 (11.01.01), Full text & EP 1189855 A1 & JP 2003-503467 A	4, 5 6-23
Y	Edited by CSJ: The Chemical Society of Japan, "Shin Jikken Kagaku Koza 14 Yuki Kagobutsu no Gosei to Han'no [I]", (publisher Maruzen Co., Ltd.), 1977, pages 308 to 331	18-23
A	GEDYE, R. et al., THE USE OF MICROWAVE OVENS FOR RAPID ORGANIC SYNTHESIS, Tetrahedron Letters, 1986, Vol.27, No.3, pages 279 to 282	4-23
A	WO 97/41083 A1 (PHONE-POULENC CHEMICALS LTD.), 06 November, 1997 (06.11.97), Full text & EP 900180 A1 & JP 2000-509384 A & US 6179970 B1	1-23

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Box I Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

The subject matters of the claims are classified into two groups of inventions, i.e., (1-3) and (4-23).

The first and second groups of inventions each relates to a method of fluorinating a substrate. However, methods of substrate fluorination are known. That method cannot hence be regarded as a "special technical feature" in the meaning of Rule 13.2 of the Regulations under the PCT.

The "special technical feature" of the first group of inventions is a method (continued to extra sheet)

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

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Continuation of Box No. II of continuation of first sheet (1)

of fluorinating a glucide with a fluorinating agent represented by the general formula (I).

On the other hand, the "special technical feature" of the second group of inventions is a method of fluorinating a substrate in which the substrate is reacted with a fluorinating agent by irradiation with microwave and/or an electromagnetic wave with a wavelength around the microwave region.

Consequently, there is no technical relationship between these two groups of inventions which involves one or more identical or corresponding special technical features. Therefore, it cannot be considered that they are so linked as to form a single general inventive concept.

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